

ABSTRACT OF THE DISCLOSURE

According to the present invention, a metal and a barrier material, such as copper and a tantalum-based barrier material, are effectively removed from the wafer edge and especially from the bevel by using an etchant that comprises a diluted mixture of hydrofluoric acid and nitric acid. The method is compatible with currently available etch modules for removing metal from the wafer edge, wherein, depending on the hardware specifics, copper, barrier material and dielectric material may be removed in a single etch step, or a first etch step may be performed substantially without any nitric acid so as to avoid the formation of nitric oxides. In this way, the formation of instable layer stacks may be substantially avoided, thereby reducing the risk of material delamination from the substrate edge.